



NOAA In Your State



NOAA is an agency that enriches life through science. Our reach goes from the surface of the sun to the depths of the ocean floor as we work to keep citizens informed of the changing environment around them. From daily weather forecasts, severe storm warnings, and climate monitoring to fisheries management, coastal restoration and supporting marine commerce, NOAA's products and services support economic vitality and affect more than one-third of America's gross domestic product. NOAA's dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information they need when they need it.

The following is a summary of NOAA facilities, staff, programs, or activities based in, or focused on, your state or territory: Starting with highlights, then by <u>congressional districts and cities or towns</u>, <u>coastal programs</u>, <u>Great Lakes programs</u>, and then <u>statewide programs</u>.

Highlights of NOAA in New York

<u>Eastern Region Headquarters</u> Bohemia NY-2

Hudson River National Estuarine Research Reserve Annandale-on-Hudson NY-19,

20

Greater Atlantic Regional Fisheries Office and Northeast

NY

Fisheries Science Center

The state of New York also has four Weather Forecasting Offices, one Labs and Field Offices, three Science on a Sphere® exhibitions, and one National Estuarine Research Reserves.

Weather Forecast Offices

Upton/Central Long Island/ New York Metro Area NY-1

Albany NY-20

Binghamton NY-22

Buffalo NY-26

National Weather Service (NWS) Weather Forecast Offices (WFO) are staffed 24/7/365 and provide weather, water, and climate forecasts and warnings to residents of New York. There are 122 WFOs nationwide of which four are in New York. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, hurricanes, winter storms, floods, and heat waves to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including wireless emergency alerts, social media, weather.gov, and NOAA Weather Radio All Hazards. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs that strengthen working relationships with local partners in emergency management, government, the media and academic communities. Forecasters provide Impact-based Decision Support Services (IDSS), both remotely and on-site during critical emergencies such as wildfires, floods and chemical spills, and major recovery efforts. To gather data for forecasting and other purposes, NWS WFO staff monitor, maintain and use Automated Surface Observing Stations and Doppler Weather Radar. In addition to the WFOs, NWS operates specialized national prediction centers and regional headquarters throughout the U.S. for a total of 168 operational units. Over 85% of NWS' workforce is in the field. For current New York weather, visit www.weather.gov and, on the national map, click on the relevant county or district.

Science On a Sphere®

Tupper Lake NY-21
Horseheads NY-23
Rochester NY-25

Science On a Sphere (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain in a way that is simultaneously intuitive and captivating what are sometimes complex environmental processes. They are located at The Wild Center in Tupper Lake, Wings of Eagles Discovery Center in Horseheads, and Rochester Museum and Science Center in Rochester.

NY-1 Bellport

National Marine Fisheries Service (NMFS) - Office of Law Enforcement

NOAA's Office of Law Enforcement is the only conservation enforcement program (Federal or State) that is exclusively dedicated to Federal fisheries and marine resource enforcement. Its mission is to protect global marine resources by enforcing domestic laws and international treaties and obligations dedicated to protecting wildlife and their natural habitat. Our special agents and enforcement officers ensure compliance with these laws and take enforcement action if there are violations. Additionally, the Cooperative Enforcement Program allows NOAA the ability to leverage the resources and assistance of 27 coastal states and U.S. territorial marine conservation law enforcement agencies in direct support of the Federal enforcement mission. Effective fisheries law enforcement is critical to creating a level playing field for U.S. fishermen and enabling sustainable fisheries to support vibrant coastal communities. The Bellport field office is part of the Office of Law Enforcement's Northeast Division.

East Hampton

National Marine Fisheries Service (NMFS) - Port Agent Field Office

The Greater Atlantic Region's Port Agent Team works directly with the fishing industries of the region to provide in-person advice and support to fishermen and seafood dealers. Port agents also serve as a conduit for industry to relay information to the Regional Administrator and other NOAA staff about fishing industry concerns, thoughts and activities. Team members assist seafood dealers and vessel operators and owners with data reporting requirements, in navigating the permitting process, and with other Agency regulations and processes. They collect biological samples of seafood landed by commercial fishermen for use in fisheries stock assessments. They also provide the general public with information on fisheries and the marine environment by attending public events and through ad-hoc interactions.

Upton/Central Long Island/ New York Metro Area

National Weather Service (NWS) - Weather Forecast Office

Located at the Department of Energy's Brookhaven National Laboratory, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of the New York City metropolitan area, including Connecticut and northeast New Jersey. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

NY-2

Bohemia

National Weather Service (NWS) - Eastern Region Headquarters

The NWS Eastern Region Headquarters is the administrative and support center for 23 NWS Weather Forecast Offices, four aviation-focused Center Weather Service Units, and three River Forecast Centers in 16 states (Maine, New Hampshire, Massachusetts, Vermont, Connecticut, Rhode Island, New York, Pennsylvania, South Carolina, North Carolina, Ohio, West Virginia, Virginia, Maryland, New Jersey, Delaware) and the District of Columbia. Services provided by a regional headquarters to local NWS offices within the region include scientific support and development, program management and guidance, field support for new program implementation, budget support, and employee recruitment and assistance.

Islip

National Weather Service (NWS) - Center Weather Service Unit

Housed in the Federal Aviation Administration's New York Air Traffic Control Center (ARTCC), the NWS Center Weather Service Unit (CWSU) provides aviation forecasts and other weather information to ARTCC personnel for use in directing the safe, smooth flow of aviation traffic in the New York Metropolitan area, northern New Jersey, and eastern Pennsylvania.

NY- 5, 8, 13 New York City

National Ocean Service (NOS) - New York / New Jersey Harbor PORTS®

A Physical Oceanographic Real-Time System (PORTS®) is operated cooperatively with the local maritime community in the New York / New Jersey Harbor area with real-time data quality-controlled and disseminated to local users for safe and efficient navigation. Real-time data are available for water levels from four stations, tidal currents from three stations, meteorological data from six locations and air gap observations from bridges at two locations.

NY-7

Linden Hill

National Marine Fisheries Service (NMFS) - Federal Inspection Office

NOAA's Seafood Inspection Program conducts a voluntary inspection program for fishery products on a fee-for-service basis. The office offers a wide range of services to the area's fishermen and fish processors including process and product inspection, product grading, lot inspection, laboratory analysis, and training. All edible foodstuffs, ranging from whole fish to formulated products, as well as fishmeal used for animal foods, are eligible for inspection and certification.

NY-8 Brooklyn

NOAA Office of Education - Environmental Literacy Program

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In New York, ELP supports the New York Aquarium (Kings) as a member of the Coastal Ecosystem Learning Center (CELC) Network, which is a consortium of 25 aquariums and marine science education centers working together to engage the public in protecting coastal and marine ecosystems.

New York City

National Marine Fisheries Service (NMFS) - Market News

NOAA's "Fishery Market News" began operations in New York City on February 14, 1938. This office provides accurate and unbiased reports depicting current conditions affecting the trade in fish and fishery products.

NY-10

New York City

National Ocean Service (NOS) - Regional Resource Coordinators

The Office of Response and Restoration's (OR&R) Regional Resource Coordinators (RRC) based in New York provides scientific and technical expertise and timely response to oil spills or hazardous materials releases to collect information, samples, and evidence that are time dependent and critical to support natural resource damage assessments throughout the coastal US. Specifically, RRCs work on multi-disciplinary scientific, economic, and legal teams and are responsible for determining and quantifying injuries to NOAA trust natural resources through determination of injuries and pathway, and demonstration of causal mechanisms. RRCs document the severity, geographic extent, and likely duration of the injury. The goal of the RRCs efforts is to determine the appropriate amount and type of restoration required to restore injured NOAA trust resources and compensate the public for their lost use.

Office of Oceanic and Atmospheric Research (OAR) - Consortium for Climate Risk in the Urban Northeast

The Consortium for Climate Risk in the Urban Northeast (CCRUN) is a cooperative agreement between NOAA's Climate Program Office (CPO) and Columbia University. It is one of several Regional Integrated Sciences and Assessments (RISA) teams contributing to the development of knowledge, expertise, and abilities of decision-makers to plan and prepare for climate variability and change. CCRUN, the only RISA team with a principal focus on urban settings, serves stakeholder needs in the Northeast, especially the Boston, New York, and Philadelphia metropolitan areas. The program addresses the complex challenges that are associated with densely populated, highly interconnected urban areas, such as urban heat island effects; poor air quality; intense coastal development, and multifunctional settlement along inland waterways; complex overlapping institutional jurisdictions; integrated infrastructure systems; and highly diverse, and in some cases, fragile socio-economic communities. CCRUN's projects are focused in three broad sectors: water, coasts, and health. Research in each of these sectors is linked through the cross-cutting themes of climate science, engineering & urban design, and the social dimensions of adaptation. Core partners of CCRUN include Boston University, City College of New York-Hunter College, Columbia University, Cornell University, Drexel University, Stevens Institute of Technology, and University of Massachusetts-Amherst.

NOAA Office of Education - Environmental Literacy Program

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In New York, ELP funded the National Wildlife Federation's Eco-Schools (New York) to build the environmental literacy of children, youth, and adults so they are knowledgeable of the ways in which their community can become more resilient to extreme weather, climate change, and other environmental hazards, and become involved in achieving that resilience.

NY-13

New York City

NOAA Office of Education - The NOAA Center for Earth System Sciences & Remote Sensing Technologies

The NOAA Cooperative Remote Sensing Science and Technology Center (CREST) is led by the City College of the City University of New York in collaboration with Hampton University, the University of Maryland-Baltimore County, the University of Puerto Rico at Mayaguez, San Diego State University, University of Texas at El Paso and corporate partners including Raytheon and Northrop Grumman. CREST is part of NOAA's Educational Partnership Program with Minority Serving Institutions. CREST's research into cutting edge remote sensing applications supports NOAA climate, weather

and water, and ecosystem goals. The Center's research focuses on all aspects of remote sensing - sensor development, satellite remote sensing, ground-based field measurements, data processing and analysis, modeling, and forecasting. CREST trains students in science and engineering with a focus on underrepresented minorities in NOAA related sciences. CREST's primary collaborator at NOAA is the National Environmental Satellite, Data, and Information Service, and CREST research is also aligned with the needs of NOAA's National Weather Service and Office of Oceanic and Atmospheric Research.

Harlem, New York City

National Environmental Satellite, Data, and Information Service (NESDIS) - STAR, OSAAP - NOAA Center for Earth System Sciences and Remote Sensing Technologies (CESSRST)

NOAA Center for Earth System Sciences and Remote Sensing Technologies (CESSRST), a Cooperative Science Center (CSC), was established in 2016 through a national competition and is funded by National Oceanic and Atmospheric Administration pursuant to the **José E. Serrano Educational Partnership Program with Minority Serving Institutions**. The participating institutions are geographically distributed across the nation and enjoy a high enrollment of under-represented minority students. It is a consortium of six institutions, led by **The City College of The City University of New York (CCNY)** in partnership with

- Hampton University (HU)
- San Diego State University (SDSU)
- University of Maryland, Baltimore County (UMBC)
- University of Puerto Rico, Mayaguez (UPRM)
- University of Texas, El Paso (UTEP)

CESSRST builds on the successes of 15 years (2001-2016) of NOAA-EPP/MSI funding for the Center for Remote Sensing Science and Technologies (NOAA-CREST) as a national leader in STEM workforce development and supporting NOAA mission related to Earth Systems observations, monitoring through application of environmental satellites and ground-based remote sensing technologies. The mission of the Center is to educate, train and graduate a new generation of diverse and competent cadre of students, and to create a diverse and skilled workforce in NOAA (National Oceanic and Atmospheric Administration) mission-aligned STEM (Science, Technology, Engineering and Mathematics) and social science disciplines through participation in state-of-the-art research. CESSRST supports NOAA's mission "to understand and predict changes in Earth's environment and to conserve and manage coastal and marine resources to meet nation's economic, social, and environmental needs."

NY-17 Palisades

Office of Oceanic and Atmospheric Research (OAR) - International Research Institute

NOAA's Climate Program Office International Research Institute for Climate and Society (IRI) was established in 1996 by NOAA and Columbia University as the world's first international institute with a mission to apply climate science in the service of society. IRI uses a science-based approach to enhance society's capability to understand, anticipate and manage the impacts of climate in order to improve human welfare and the environment, especially in developing countries. By providing practical advancements that reduce vulnerability to climate-related risks in the present, we are creating solutions that will increase adaptability to long-term climate change.

NY-19 Millbrook

Office of Oceanic and Atmospheric Research (OAR) - U.S. Climate Reference Network

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

NY-19, 20

Annandale-on-Hudson

National Ocean Service (NOS) - Hudson River National Estuarine Research Reserve

The 4,838-acre Hudson River Research Reserve was designated in 1982 and is managed by the New York Department of Environmental Conservation. The reserve spans the middle 100 miles of the Hudson River estuary and is comprised of four sites: the tidal wetlands and uplands of Piedmont Marsh, Iona Island, Tivoli Bays, and Stockport Flats. The reserve sponsors interpretative programs for the public, educators, and students. Research and management efforts are focused on understanding impacts of sea level rise on marshes and communities, and fostering adaptive strategies to manage those impacts.

National Ocean Service (NOS) - Margaret A. Davidson Graduate Fellowship

The Margaret A. Davidson Graduate Fellowship program funds graduate student research and professional development opportunities within the National Estuarine Research Reserve System. The program supports collaborative research addressing local management challenges that may influence future policy and management strategies. The Davidson Fellow at Hudson River National Estuarine Research Reserve will focus their research on developing methods to measure historic wetland accretion.

NY-20 Albany

National Weather Service (NWS) - Weather Forecast Office

Located at the State University of New York at Albany, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of southern Vermont, east central New York, and northwest Connecticut. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

NY-21

Tupper Lake

Office of Oceanic and Atmospheric Research (OAR) - Science On a Sphere® at The Wild Center

Science On a Sphere (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain complex environmental processes in a way that is simultaneously intuitive and captivating.

NOAA Office of Education - Environmental Literacy Program

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In New York, ELP funded the Wild Center (Franklin) to build the environmental literacy of children, youth, and adults so they are knowledgeable of the ways in which their community can become more resilient to extreme weather, climate change, and other environmental hazards, and become involved in achieving that resilience. ELP supports the Wild Center, which has a permanent exhibit featuring NOAA's Science On a Sphere (SOS) and is a member of NOAA's SOS Users Collaborative Network (SOS Network). The SOS Network connects over 150 science education institutions worldwide to the latest NOAA data as part of a focused effort to increase environmental literacy at all ages.

NY-22 Binghamton

National Weather Service (NWS) - Weather Forecast Office

Located at Binghamton Regional Airport, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of central New York and northeast Pennsylvania. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

Tompkins County

Office of Oceanic and Atmospheric Research (OAR) - National Trends Network

A NOAA Air Resources Laboratory National Trends Network (NTN) site is located in Ithaca, NY. The site has been in operation since 1992 collecting data on major ions in precipitation (rain, snow) on a daily basis and from 1976 on an event basis. The major ions collected include: sulfate, nitrate, phosphorus, pH, ammonium, sodium, chloride, and soil cations.

NY-23 through 29

Various Great Lakes and tributary cities

National Ocean Service (NOS) - National Water Level Observation Network

The National Ocean Service (NOS) operates eleven long-term continuously operating water level stations in the state of New York, which provide data and information on Great Lakes and interconnecting waterways datum and lake level regulation and are capable of producing real-time data for storm surge warning. These stations are located on the St. Lawrence River at Ogdensburg and Alexandria Bay; on Lake Ontario at Cape Vincent, Oswego, Rochester, and Olcott; on the Niagara River at Ashland Avenue, American Falls, and Niagara Intake; and on Lake Erie at Buffalo and Sturgeon Point.

NY-23

Ithaca

Office of Oceanic and Atmospheric Research (OAR) - <u>U.S. Climate Reference Network</u>

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>National Centers for Environmental</u> <u>Information - Northeast Regional Climate Centers</u>

NOAA NCEI's six Regional Climate Centers (RCCs) support the development and delivery of a wide range of place-based climate science and information products and services to assist decision makers in making informed decisions. The RCCs are a federal-university cooperative effort that supports the operational production and delivery of climate data and information to decision-makers at regional levels. The RCCs also participate in basic and applied climate research as well as user engagement and outreach activities. The service provided by the RCCs has evolved through time to become an efficient, user-driven program that exemplifies many of the components that have been cited for effective regional climate services.

Horseheads

Office of Oceanic and Atmospheric Research (OAR) - Science On a Sphere® at Wings of Eagles Discovery Center Science On a Sphere (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain complex environmental processes in a way that is simultaneously intuitive and captivating.

NOAA Office of Education - Environmental Literacy Program

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In New York, ELP supports the Wings of Eagles Discovery Center (Chemung), which has a permanent exhibit featuring NOAA's Science On a Sphere (SOS) and is a member of NOAA's SOS Users Collaborative Network (SOS Network). The SOS Network connects over 150 science education institutions worldwide to the latest NOAA data as part of a focused effort to increase environmental literacy at all ages.

NY-25

Rochester

Office of Oceanic and Atmospheric Research (OAR) - <u>Science On a Sphere® at Rochester Museum and Science</u> <u>Center</u>

Science On a Sphere (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain complex environmental processes in a way that is simultaneously intuitive and captivating.

NOAA Office of Education - Environmental Literacy Program

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In New York, ELP supports the Rochester Museum & Science Center (Monroe), which has a permanent exhibit featuring NOAA's Science On a Sphere (SOS) and is a member of NOAA's SOS Users Collaborative Network (SOS Network). The SOS Network connects over 150 science education institutions worldwide to the latest NOAA data as part of a focused effort to increase environmental literacy at all ages.

NY-26 Buffalo

National Weather Service (NWS) - Weather Forecast Office

Located at the Greater Buffalo International Airport, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of western New York State. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

National Ocean Service (NOS) - Ocean Guardian School Program

An Ocean Guardian School makes a commitment to the protection and conservation of its local watersheds, the world's ocean, and special ocean areas, like national marine sanctuaries. Funds are provided to schools at \$4,000 per year if the school makes this commitment by proposing and then implementing a school- or community-based conservation project. Once the school has completed its project, the school receives official recognition as a NOAA Ocean Guardian School.

To date, the Ocean Guardian School Program has partnered with more than 147 schools and has reached more than 80,400 students.

National Ocean Service (NOS) - Students for Zero Waste Week

Students are inviting their local communities to "Go Green and Think Blue" by joining them in the annual *Students for Zero Waste Week campaign*. During this campaign led by the Office of National Marine Sanctuaries, students focus on reducing land-based waste in order to protect the health of local marine environments. These young leaders are raising awareness of how single-use plastic and other types of litter affect the health of local watersheds, national marine sanctuaries, and the ocean. In addition, some schools are looking at ways to reduce their energy use on campus with hopes of raising awareness of how the burning of fossil fuels also impacts the health of the ocean.

Coastal

National Marine Fisheries Service (NMFS) - Deep-Sea Coral Research and Technology Program

NOAA's Deep Sea Coral Research and Technology Program is the only federal program dedicated to mapping, characterizing, and understanding deep-sea coral ecosystems, and sharing the information needed to conserve these habitats. The Program -- called for in the reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act and within the Office of Habitat Conservation -- is working with other NOAA offices and external partners to conduct fieldwork to study the distribution, abundance, and diversity of deep sea corals and sponges. Since 2009, more than 42,500 square miles of seafloor have been mapped and surveyed for deep-sea coral habitats from Florida to Maine, in Alaska and the West Coast, and in Hawaii and the Marianas Trench.

National Marine Fisheries Service (NMFS) - Cooperation with States Program and Species Recovery Grants
Under the authority of section 6 of the Endangered Species Act, the Cooperation with States Program brings states,
NMFS, and other partners together to recover threatened and endangered species. A total of 25 U.S. territories and
coastal states, including New York, currently participate in this program. Competitive grants are awarded to states through
the Species Recovery Grants to States Program to support management, monitoring, research and outreach efforts for
species that spend all or a portion of their life cycle in state waters. The funded work is designed to prevent extinctions or
reverse the decline of species, and restore ecosystems and their related socioeconomic benefits. The New York State
Department of Environmental Conservation has received multiple awards through this program, including grants to
support projects focused on Atlantic sturgeon.

National Marine Fisheries Service (NMFS) - Sea Turtle Salvage and Stranding Network

The Sea Turtle Stranding and Salvage Network (STSSN) was formally established in 1980 to collect information on and document strandings of marine turtles along the U.S. Gulf of Mexico and Atlantic coasts. The network, which includes federal, state and private partners, encompasses the coastal areas of the eighteen-state region from Maine to Texas, and includes portions of the U.S. Caribbean. Data gathered by the Network helps inform bycatch reduction efforts, monitor factors affecting turtle health, and provide other information needed for sea turtle management and population recovery.

National Marine Fisheries Service (NMFS) - <u>National Marine Mammal Stranding Network</u> and <u>John H. Prescott</u> <u>Marine Mammal Rescue Assistance Grant Program</u>

The National Marine Mammal Stranding Network and its trained professionals respond to dead or live marine mammals in distress that are stranded, entangled, out of habitat or otherwise in peril. Our long-standing partnership with the Network provides valuable environmental intelligence, helping NOAA establish links among the health of marine mammals, coastal ecosystems, and coastal communities as well as develop effective conservation programs for marine mammal populations

in the wild. There are two stranding network members in the state. NOAA Fisheries funds eligible members of the Stranding Network through the John H. Prescott Marine Mammal Rescue Assistance Grant Program. For fiscal year 2020, 43 competitive Prescott Grants were awarded for a total of \$3.7 million nationwide. Three awards totalling \$210,964 were given to recipients in New York, one to New York Maine Rescue Center and two to Atlantic Marine Conservation Society, Ltd.

National Ocean Service (NOS) - National Water Level Observation Network

NOS operates three long-term continuously operating tide stations in the state of New York which provide data and information on tidal datum and relative sea level trends, and are capable of producing real-time data for storm surge warning. These stations are located at Montauk, Kings Point, and the Battery in New York City. Each station is associated with a set of tidal benchmarks installed in the ground that is used to reference the height of the water levels and helps connect the water level to land.

National Ocean Service (NOS) - Navigation Manager

NOAA's navigation managers work directly with pilots, port authorities, and recreational boating organizations in New York. The Office of Coast Survey has a navigation manager located in Narragansett, RI, to support mariners and stakeholders in the Northeast. Navigation managers are on call to provide expertise and NOAA navigation response coordination in case of severe coastal weather events or other marine emergencies. In the day-to-day operations of the maritime transportation system, NOAA's navigation managers help identify the navigational challenges facing marine transportation in New York and provide NOAA's resources and services that promote safe and efficient navigation.

National Ocean Service (NOS) - Navigation Response Team

The Office of Coast Survey (OCS) maintains the nation's nautical charts and publications for U.S. coasts and the Great Lakes. OCS navigation managers are strategically located in U.S. coastal areas to provide regional support to federal and state agencies in order to assist with navigational challenges. The Office of Coast Survey's Navigation Response Branch (NRB) conducts routine and emergency hydrographic surveys; and working with the regional Navigation Managers, navigation response teams (NRT) work around-the-clock after storms to speed the reopening of ports and waterways. During emergency response, the NRTs provide time-sensitive information to the U.S. Coast Guard or port officials, and transmit data to NOAA cartographers for updating Coast Survey's suite of navigational charts. NRT-New London is homeported in New London, CT and is able to respond in the Northeast region within 24 to 48 hours.

National Ocean Service (NOS) - Coastal and Estuarine Land Conservation Program

The Coastal and Estuarine Land Conservation Program brings conservation partners together to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical, or aesthetic values. Subject to availability of funding, the program provides state and local governments with matching funds to purchase coastal and estuarine lands or obtain conservation easements for important lands threatened by development. Since 2002, the program has protected more than 110,000 acres of coastal land nationally, including over 16,000 acres protected as in-kind matching contributions. NOAA awarded fourteen grants in New York, and these lands are protected in perpetuity.

National Ocean Service (NOS) - National Coastal Zone Management Program

Through a unique federal-state partnership, NOAA's Office for Coastal Management works with the New York Department of State, Office of Planning and Development, to implement the National Coastal Zone Management Program in New York. NOAA provides the state coastal management program with financial and technical assistance to further the goals of the Coastal Zone Management Act and ensure coastal waters and lands are used in a balanced way to support jobs, reduce use conflicts, and sustain natural resources.

National Ocean Service (NOS) - Coastal Management Fellowship

This program matches postgraduate students with state and territory coastal zone programs to work on two-year projects proposed by the state or territory. The New York Coastal Zone Management Program is hosting a fellow from 2019-2021 who is developing a scenario planning tool that will support three goals: community and regional resilience planning, local waterfront revitalization planning, and improved federal consistency review.

National Ocean Service (NOS) - Digital Coast

The Digital Coast is a focused information resource developed to meet the unique needs of coastal communities. Developed and maintained by NOAA's Office for Coastal Management, content comes from hundreds of organizations, including federal, state, and local agencies, plus private sector and non-profit contributors. The Digital Coast website provides not only site-specific coastal data, but also related the tools, training, and information needed to make these data useful for coastal decision makers.

National Ocean Service (NOS) - Mid-Atlantic Committee on the Ocean (MACO)

MACO is a committee established by the Mid-Atlantic Regional Council for the Ocean (MARCO) to foster collaboration among states, federal agencies, the Mid-Atlantic Fishery Management Council (MAFMC), and federally recognized tribes to enhance the vitality of the region's ocean ecosystem and economy through increased communication and collaboration. To maintain quality constituent service, staff from NOAA Office for Coastal Management lead NOAA's engagement with MACO, MARCO and state coastal management programs to improve the delivery of NOAA products and services in this region.

National Ocean Service (NOS) - National Coastal Resilience Fund

The National Coastal Resilience Fund is a partnership effort between NOAA and the National Fish and Wildlife Foundation (NFWF) to restore, increase, and strengthen natural infrastructure to protect coastal communities, while also enhancing habitat for fish and wildlife. In New York, five projects have been funded, including one in FY18, two in FY19 and two in FY20.

National Ocean Service (NOS) - Atlantic Environmental Response Management Application

Assessing important spatial information and designing successful restoration projects rely upon interpreting and mapping geographic information, including the location, duration, and impacts from oil spills, other hazardous materials, or debris released into the environment. Atlantic Environmental Response Management Application (ERMA®) is an online mapping tool that integrates both static and real-time data, such as Environmental Sensitivity Index maps, ship locations, weather, and ocean currents, in a centralized, easy-to-use format for environmental responders and decision makers. In 2012, Atlantic ERMA was employed as the Command Operational Picture for the U.S. Coast Guard's pollution response to Tropical Storm Sandy.

National Ocean Service (NOS) - Marine Debris Projects and Partnerships

The NOAA Marine Debris Program (MDP) leads national and international efforts to research, prevent, and reduce the impacts of marine debris. The program supports marine debris removal, education and outreach, and research projects in partnership with state and local agencies, tribes, non-governmental organizations, academia, and industry. The MDP Mid-Atlantic and Great Lakes Regional Coordinators support coordination efforts with regional stakeholders, provide support to grant-funded projects, track progress of projects, and conduct regional marine debris outreach to local audiences. In New York, the MDP is supporting the New York City Department of Parks and Recreation to remove medium- to large-scale debris items at two critical sites in Jamaica Bay. Additionally, the MDP is supporting Buffalo Niagara Waterkeeper to remove marine debris from the Great Lakes and prevent marine debris through the installation of fishing line recycling bins and education and outreach to anglers and the refugee community in the area. The MDP is

working with stakeholders to develop the Mid-Atlantic Marine Debris Action Plan, and has worked with stakeholders to develop and implement the Great Lakes Marine Debris Action Plan, which provide a road map for strategic progress in making the Mid-Atlantic and Great Lakes free from the impacts of marine debris.

National Ocean Service (NOS) - U.S. Integrated Ocean Observing System (<u>Mid-Atlantic Regional Association</u> <u>Coastal Ocean Observing System</u>)

The U.S. Integrated Ocean Observing System, or IOOS®, is a federally and regionally coordinated observing system with 17 interagency and 11 regional partners. The System addresses regional and national needs for coastal, ocean, and Great Lakes data and information. This includes gathering and disseminating regional observations; data management; modeling and analysis; education and outreach; and research and development. The Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS), part of the Integrated Ocean Observing System (IOOS), is one of eleven regional associations in the United States focused on ocean observing. Our region extends from Cape Hatteras to Cape Cod and includes all the estuaries and the continental shelf waters. MARACOOS provides the necessary ocean observing, data management, and forecasting capacity to systematically address prioritized themes maritime safety, ecosystem based management, water quality, coastal inundation, and offshore energy development.

National Weather Service (NWS) - Buoys

The National Weather Service (NWS), through its National Data Buoy Center (NDBC), develops, deploys, operates, and maintains the current national data buoy network of moored and drifting weather buoys and land stations that serve all of the Nation's coastal states and territories. Within this network, 110 of the buoys and 51 of the land stations are maintained directly by NDBC. Located at NASA's Stennis Space Center in Mississippi, NDBC supports weather and marine warning and forecast services in real time by providing deep ocean and coastal meteorological and oceanographic observations. These data provide valuable information used by NWS supercomputers to produce computer-generated model forecasts of the atmosphere and climate. NDBC manages the Volunteer Observing Ship program to acquire additional meteorological and oceanographic observations supporting NWS mission requirements. NDBC also supports operational and research programs of NOAA and other national and international organizations.

National Ocean Service - National Marine Sanctuary Nominations

NOAA has determined that the Hudson Canyon sanctuary nomination has successfully met the national significance criteria and management considerations described in the sanctuary nomination process. The area under consideration by NOAA for national marine sanctuary designation may be selected, but being on the inventory does not guarantee that the nominated area will become a sanctuary.

Great Lakes

National Marine Fisheries Service (NMFS) and National Ocean Service (NOS) - <u>Bay Watershed Education and Training Program</u>

The NOAA Bay Watershed Education and Training (B-WET) program is an environmental education program that promotes locally relevant, experiential learning in the K-12 environment. The primary delivery of B-WET is through competitive funding that promotes systemic Meaningful Watershed Educational Experiences (MWEEs). The B-WET program recognizes that knowledge and commitment built from firsthand experience, especially in the context of one's community and culture, is essential for achieving environmental stewardship. Chesapeake Bay and Great Lakes B-WET respond to regional education and environmental priorities through local implementation of competitive grant funds and is supportive of partnerships between school districts and community organizations and institutions that are run by and/or

serve marginalized groups, particularly minority communities.

National Ocean Service (NOS) - Great Lakes Environmental Response Management Application

Assessing important spatial information and designing successful restoration projects rely upon interpreting and mapping geographic information, including the location, duration, and impacts from oil spills, other hazardous materials, or debris released into the environment. Great Lakes Environmental Response Management Application (ERMA®) is an online mapping tool that integrates both static and real-time data, such as Environmental Sensitivity Index maps, ship locations, weather, and ocean currents in a centralized, easy-to-use format for environmental responders and decision makers.

Office of Oceanic and Atmospheric Research (OAR) - CoastWatch

The NOAA CoastWatch Great Lakes regional node obtains, produces, and delivers environmental data and products for near real-time observation of the Great Lakes to support environmental science, decision making, and supporting research. This is achieved by providing internet access to near real-time and retrospective satellite data and products, as well as in-situ Great Lakes data. The CoastWatch node at Great Lakes Environmental Research Laboratory provides clients including Federal, state, and local agencies, academic institutions, commercial/industries and the public, both within and outside of the Great Lakes region, with access to near real-time satellite observations and in-situ data for the Great Lakes.

CoastWatch data are used in a variety of ways, including near real-time observation and tracking of algal blooms, plumes, ice cover, wind speed/direction, surface water intake temperatures at fish hatcheries, two and three dimensional modeling of Great Lakes physical parameters such as wave height and currents damage assessment modeling, research, and educational and recreational activities. In addition, through a cooperative project with Michigan Sea Grant, Great Lakes CoastWatch satellite-derived surface water temperature imagery is contoured and made available via Michigan State Sea Grant's website. Great Lakes CoastWatch data and products benefit riparians as well as research, operational, and recreational users.

National Ocean Service (NOS) - U.S. Integrated Ocean Observing System (Great Lakes Observing System)

The U.S. Integrated Ocean Observing System, or IOOS®, is a federally and regionally coordinated observing system with 17 interagency and 11 regional partners. The System addresses regional and national needs for coastal, ocean, and Great Lakes data and information. This includes gathering and disseminating regional observations; data management; modeling and analysis; education and outreach; and research and development. The Great Lakes Observing System (GLOS) provides public access to critical, real-time and historical data and information about the Great Lakes, St. Lawrence River and interconnecting waterways for use in managing, safeguarding and understanding these immensely valuable freshwater resources. GLOS is intended to gather and integrate chemical, biological and hydrologic data, and monitor lake conditions and trends over time.

National Ocean Service (NOS) - Proposed Lake Ontario National Marine Sanctuary

In 2017, the state of New York, the city of Oswego, and four counties (Oswego, Jefferson, Wayne, and Cayuga) submitted a nomination for the proposed Great Lake Ontario National Marine Sanctuary to be added to NOAA's inventory for potential designation. In April 2019, NOAA proposed the designation of a national marine sanctuary in eastern Lake Ontario to protect historically significant shipwrecks and maritime heritage resources. Following the end of the three-month public comment period, NOAA is now conducting a detailed analysis to develop sanctuary alternatives and a management plan for the proposed national marine sanctuary. NOAA recently established a sanctuary advisory council to help inform the designation process and focus stakeholder participation and is seeking applicants to fill those seats. The area being considered for designation as a national marine sanctuary is a region in eastern Lake Ontario that includes approximately 1,700 square miles of lake waters and bottomlands adjacent to Jefferson, Wayne, Oswego, and Cayuga

counties in the State of New York. The area contains 21 known shipwrecks and one military aircraft representing events spanning more than 200 years of our nation's history. Based on historical records, an additional 47 shipwrecks and two aircraft are also likely located there.

Statewide

National Marine Fisheries Service (NMFS) - <u>Greater Atlantic Regional Fisheries Office</u> and <u>Northeast Fisheries</u> <u>Science Center</u>

NMFS is responsible for the management, conservation and protection of living marine resources within the United States' Exclusive Economic Zone (water three to 200 mile offshore). The Greater Atlantic Regional Fisheries Office (located in Gloucester, MA) includes divisions that promote sustainable fisheries, habitat conservation, and recovery of protected species, and conducts statistical analysis and programs supporting these divisions. Key fish species managed in the Greater Atlantic Region include the northeast "multispecies complex" (cod, haddock, yellowtail flounder etc.), Atlantic sea scallops, herring, lobster, and summer flounder. Key marine endangered species in this region are North Atlantic right whales, leatherback. loggerhead, and Kemp's ridley sea turtles, Atlantic salmon and Atlantic and shortnose sturgeon. NMFS is the lead agency coordinating the Large Whale and Sea Turtle Disentanglement Program activities and the Marine Mammal Health and Stranding Response Program activities. The core functions of these programs include coordinating volunteer networks to: respond to entanglements and strandings, investigate mortality events, and conduct biomonitoring, tissue/serum banking, and analytical quality assurance. The Office also fosters sustainable aquaculture in the region, with two Regional Aquaculture Coordinators that act as a liaison between federal and state agencies to assist in permitting and coordination activities, supporting aquaculture outreach and education, and collaborating with industry, academia and other stakeholders on regional marine aquaculture issues.

The Northeast Fisheries Science Center (headquartered in Woods Hole, MA) focuses on collection, analysis, and presentation of scientific information about the Northeast Shelf ecosystem, its condition, and its marine life. In addition to its five laboratories, the Center uses four research vessels to support its work. They are: the NOAA ships *Henry B. Bigelow*, and the small research vessels *Gloria Michelle*, *Victor Loosanoff*, and *Nauvoo*. The Greater Atlantic Regional Fisheries Office and the Science Center are responsible for the District of Columbia and the following states: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina; and the inland states of Vermont, Minnesota, Michigan, Wisconsin, Illinois, Indiana, Ohio, and West Virginia.

National Marine Fisheries Service (NMFS) - Restoration Center

The NOAA Restoration Center, within the Office of Habitat Conservation, works with private and public partners locally and nationwide to increase fisheries productivity by restoring coastal habitat. Projects support sustainable fisheries, help recover threatened and endangered species, and reverse damage from disasters like oil spills, ship groundings, and severe storms. In the Great Lakes, the NOAA Restoration Center focuses on restoring the most degraded environments--designated Areas of Concern. Our projects address loss of habitat and diminished fish and wildlife populations. The Restoration Center works with private and public partners in New York and nationwide to restore coastal and Great Lakes habitat. We provide technical and financial assistance to help recover threatened and endangered species, support sustainably managed species, and reverse the damage done by oil spills and toxic releases.

National Marine Fisheries Service (NMFS) and National Ocean Service (NOS) - <u>Damage Assessment</u>, <u>Remediation</u>, <u>and Restoration Program</u>

NOAA's Damage Assessment, Remediation, and Restoration Program (DARRP) assesses and restores habitat, fisheries, protected species and recreational uses that have been harmed by oil spills, chemical releases, and ship groundings. Working with federal, state, and tribal entities, and responsible parties, we have recovered funding from responsible parties for restoration of critical habitats, fisheries, protected species and recreational uses nationwide. These projects promote recovery of the ecosystem and provide economic benefits from tourism, recreation, green jobs, coastal resiliency, property values and quality of life.

National Ocean Service (NOS) - Scientific Support Coordinator and Regional Resource Coordinator

NOAA's Office of Response and Restoration (OR&R) brings decades of experience, technical expertise and scientific analysis in response to oil and hazardous chemical spills. In addition to events that draw the national eye like Hurricane Sandy, OR&R also supports response to local emergencies. Eleven regionally based Scientific Support Coordinators (SSCs) harness the input of a multi-disciplinary team to address issues such as oil slick trajectory forecasting, environmental tradeoffs, best practices, resources at risk, oil science and properties, and chemical hazard assessment to reduce risks to coastal habitats and resources. The SSC works directly with the U.S. Coast Guard and the U.S. Environmental Protection Agency to provide critical scientific support to the Federal On-Scene Coordinator. OR&R also helps develop preparedness plans that identify spill response actions with the greatest environmental benefit and trains hundreds of members of the response community each year on the scientific and technical aspects of spills.

OR&R's Regional Resource Coordinators (RRCs) provide scientific and technical expertise and timely response to oil spills or hazardous materials releases to collect information, samples, and evidence that are time dependent and critical to support natural resource damage assessments throughout the coastal US. RRCs work on multi-disciplinary scientific, economic, and legal teams and are responsible for determining and quantifying injuries to NOAA trust natural resources through determination of injuries and pathway, and demonstration of causal mechanisms. The goal of the RRCs efforts is to determine, often through the Damage Assessment, Remediation, and Restoration Program (DARRP), the appropriate amount and type of restoration required to restore injured NOAA trust resources and compensate the public for their lost use. New York's RRC is based in New York City. To date, DARRP and co-trustees have recovered almost \$26M for restoration of natural resources injured by 11 oil spills and waste sites in New York.

National Ocean Service (NOS) - OR&R Environmental Sensitivity Index (ESI) maps/data

Environmental Sensitivity Index (ESI) maps are an OR&R product that provides oil spill responders and planners with a concise summary of coastal resources that could be at risk if an oil spill occurs nearby. ESI maps were originally created for the Great Lakes between 1985-1994 (depending on region) and had not been updated for decades due to limited resources. In 2020, with funding from the EPA through the Great Lakes Restoration Initiative, OR&R completed an update of the sensitivity maps/data for the Straits of Mackinac and the St. Clair-Detroit River System. OR&R recently established a new agreement with the U.S. Coast Guard to update the ESI maps for two more regions: St. Marys River, connecting Lake Superior to Lake Huron, and St. Lawrence River, from its start in Lake Ontario to the U.S./Canadian Border. These ESI updates will be completed by mid-2021. Spill responders and planners for the Great Lakes region and Canada will benefit from the updated sensitivity data. OR&R continues to seek opportunities to update these key components of emergency response planning, preparedness, and response. When completed, the ESI maps and data will be available for download from the OR&R website, as well as included in the Environmental Response Management Application (ERMA®) for the Great Lakes.

National Ocean Service (NOS) - Regional Geodetic Advisor

The Regional Geodetic Advisor is a National Ocean Service (NOS) employee that resides in a region and serves as a liaison between the National Geodetic Survey (NGS) and its public, academic and private sector constituents within their assigned region. NGS has a Regional Geodetic Advisor stationed in Barre, Vermont serving the Northeast region including New York. The Geodetic Advisor provides training, guidance and assistance to constituents managing geospatial activities that are tied to the National Spatial Reference System (NSRS), the framework and coordinate system for all positioning activities in the Nation. The Geodetic Advisor serves as a subject matter expert in geodesy and regional geodetic issues, collaborating internally across NOS and NOAA to ensure that all regional geospatial activities are properly referenced to the NSRS.

National Weather Service - NEXRAD (WSR-88D) Systems

NEXRAD is used to warn the people of the United States about dangerous weather and its location. This radar technology allows meteorologists to warn the public to take shelter with more notice than ever before. The NEXRAD network provides significant improvements in severe weather and flash flood warnings, air traffic safety, flow control for air traffic, resource protection at military bases, and management of water, agriculture, forest, and snow removal. NEXRAD radar has a range of up to 250 nautical miles, and can provide information about wind speed and direction, as well as the location, size, and shape of precipitation. There are 159 operational NEXRAD radar systems deployed throughout the United States and overseas, of which five are in New York.

National Weather Service (NWS) - Automated Surface Observing Systems Stations

The Automated Surface Observing Systems (ASOS) program is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). ASOS serves as the Nation's primary surface weather observing network. ASOS is designed to support weather forecast activities and aviation operations and, at the same time, support the needs of the meteorological, hydrological, and climatological research communities. ASOS works non-stop, updating observations every minute, 24 hours a day, every day of the year observing basic weather elements, such as cloud cover, precipitation, wind, sea level pressure, and conditions, such as rain, snow, freezing rain, thunderstorms, and fog. There are 29 ASOS stations in New York.

National Weather Service (NWS) - Cooperative Observer Program Sites

The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the Nation's weather and climate observing network of, by and for the people. More than 10,000 volunteers take observations on farms, in urban and suburban areas, National Parks, seashores, and mountaintops. The data are representative of where people live, work and play. The COOP was formally created in 1890 under the NWS Organic Act to provide observational meteorological data, usually consisting of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation totals, required to define the climate of the United States and to help measure long-term climate changes, and to provide observational meteorological data in near real-time to support forecast, warning and other public service programs of the NWS. The data are also used by other federal (including the Department of Homeland Security), state and local entities, as well as private companies (such as the energy and insurance industries). In some cases, the data are used to make billions of dollars' worth of decisions. For example, the energy sector uses COOP data to calculate the Heating and Cooling Degree Days which are used to determine individuals' energy bills monthly. There are 261 COOP sites in New York.

National Weather Service (NWS) - NOAA Weather Radio All Hazards Transmitters

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service (NWS) forecast office. NWR broadcasts official NWS warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "All Hazards" radio network, making it the

single source for comprehensive weather and emergency information. In conjunction with federal, state, and local emergency managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages). Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the NWS. NWR includes 1,100 transmitters covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. There are 24 NWR transmitters in New York.

Office of Oceanic and Atmospheric Research (OAR) - New York Sea Grant College Program

NOAA's National Sea Grant College Program is a federal-university partnership that integrates research, extension outreach, and education. Sea Grant forms a national network of 34 programs in all U.S. coastal and Great Lakes states, Puerto Rico, and Guam. Since 1971, New York Sea Grant's statewide network of integrated research, education, and extension services has worked to promote the wise use and protection of natural resources along the state's 3400 miles of marine and Great Lakes coastline. A cooperative program of the State University of New York and Cornell University, New York Sea Grant addresses important challenges and opportunities related to coastal-dependent businesses, coastal ecosystem health, community resilience to coastal hazards, fisheries, seafood safety and technology, and aquatic invasive species. Administrative offices are located in Stonybrook. Extension agents are located in Stonybrook, New York, Ithaca, Brooklyn, Kingston, Westchester, Buffalo, Oswego, and Newark.

Office of Oceanic and Atmospheric Research (OAR) - Lake Champlain Sea Grant Program

The National Sea Grant College Program (Sea Grant) is a federal-university partnership administered by NOAAthat integrates research, extension outreach, and education. Sea Grant forms a national network of 34 programs in all U.S. coastal and Great Lakes states, Puerto Rico, and Guam. The Lake Champlain Sea Grant Program, based at the University of Vermont, is the newest member of the national Sea Grant network and supports the improved understanding, use and management of Lake Champlain, Lake George, the Basin's inland waters and the Great Lakes in general. The Lake Champlain Sea Grant Program focuses the program's outreach and research priorities on coastal communities and economies, coastal ecosystem health and public safety, and education and human resources development. Administered by the University of Vermont, the Lake Champlain Sea Grant Program collaborates with Plattsburgh State University in New York. Current projects focus on healthy coastal ecosystems, sustainable fisheries and aquaculture, resilient communities and economies, and environmental literacy and workforce development. Administrative offices and extension agents of Lake Champlain Sea Grant are located in Plattsburgh.

NOAA Office of Education - Environmental Literacy Program

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to advance NOAA's mission through formal (K-12) and informal education. In New York, ELP supports the Bay Scallop Bowl in New York, one of 25 regional competitions of the National Ocean Sciences Bowl (NOSB). The NOSB is an academic competition that engages high school students in learning about ocean sciences and related STEM careers while helping them become knowledgeable citizens and environmental stewards. ELP supports the American Meteorological Society's DataStreme courses for K-12 educators through a grant and in-kind support. These courses use weather, climate, and the ocean as contexts for teaching science and improving understanding about the Earth system.

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